A/54/46

United Nations

# United Nations Scientific Committee on the Effects of Atomic Radiation

## Report of the forty-eighth session (12–16 April 1999)

**General Assembly**
**Official Records**
**Fifty-fourth session**
**Supplement No. 46 (A/54/46)**

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United Nations • New York, 1999

*Note*

Symbols of United Nations documents are composed of capital letters combined with figures. Mention of such a symbol indicates a reference to a United Nations document.

**ISSN 0255-1373**

[20 April 1999]

1. The United Nations Scientific Committee on the Effects of Atomic Radiation[1] held its forty-eighth session at Vienna from 12 to 16 April 1999. L. E. Holm (Sweden), J. Lipzstein (Brazil) and Y. Sasaki (Japan) served as Chairman, Vice-Chairman and Rapporteur, respectively.

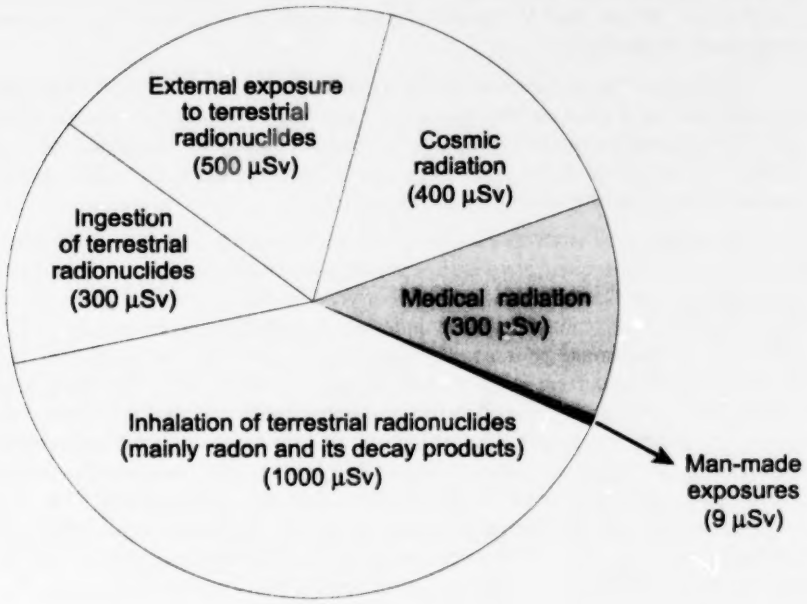
2. The Committee took note of General Assembly resolution 53/44 of 3 December 1998, by which, *inter alia,* the Assembly decided to maintain the present functions and independent role of the Committee, endorsed the plans for future activities and requested the Committee to continue the review of important problems on radiation doses and effects and to report thereon to the Assembly at its fifty-fourth session.

3. The Committee is aware of widespread concern about radiation exposures and the possible health consequences of earlier practices or events, such as the testing of nuclear weapons and the Chernobyl accident. Everyone is exposed to radiation from natural background sources, and when this is understood, useful perspective is gained in viewing exposures to man-made sources. The figure below presents the relative magnitude of radiation exposures currently received on average by individuals in the world population. Even though exposures to natural radiation dominate in the average worldwide individual doses, for certain individuals receiving particular medical examinations or treatments or those living in localized regions surrounding former nuclear test sites or in areas contaminated by wastes or accidents, the exposures can be much higher. The Committee is evaluating all such radiation exposures in detail and is addressing all issues of concern regarding radiation hazards in order to promote understanding and provide guidance concerning the response to the perceived and actual risks of radiation.

4. In technical discussions, the Committee considered recent information on sources of radiation, exposures and their effects. Those deliberations focused on a review of documents prepared by the Secretariat on subjects that the Committee had selected as the most important topics for further study. Those included: exposures from natural radiation sources; exposures from man-made sources of radiation; medical radiation exposures; occupational radiation exposures; dose assessment methodologies; epidemiological evaluation of radiation-induced cancer; DNA repair and mutagenesis; hereditary effects of radiation; combined effects of radiation and other agents; biological effects at low radiation doses — models, mechanisms and uncertainties; and exposures and effects of the Chernobyl accident. The Committee made suggestions for the further development of those topics, in particular pointing out new and additional information to be considered.

5. The Committee expects to complete its current assessments and publish its findings in the year 2000. The report will be a comprehensive review of radiation issues, including the exposures received worldwide from natural background radiation and the additional exposures caused by various man-made sources of radiation. Further results will be presented from epidemiological studies of radiation effects. The risk estimates for hereditary effects are being re-evaluated, and the mechanistic understanding of radiation responses will be presented. The report should be widely relevant to all issues of radiation sources and effects.

**Annual average worldwide individual radiation doses**


External exposure to terrestrial radionuclides (500 μSv)
Cosmic radiation (400 μSv)
Ingestion of terrestrial radionuclides (300 μSv)
Medical radiation (300 μSv)
Inhalation of terrestrial radionuclides (mainly radon and its decay products) (1000 μSv)
Man-made exposures (9 μSv)

*Note*: The components of natural radiation exposure arise from cosmic radiation incident on the Earth and from terrestrial radionuclides present in the environment. The terrestrial radionuclides cause exposure by irradiation from outside the body (external exposure to radionuclides in soil and building materials) or from radionuclides taken into the body by inhalation or ingestion of foods and water. Radon is a naturally occurring gas that accumulates to higher levels indoors.

Man-made exposures are caused by radionuclides released to the environment from various practices or events, such as testing of nuclear weapons in the atmosphere and the operation of nuclear fuel cycle installations. Included among man-made exposures are occupational exposures received by those who work with radiation sources in nuclear, medical and other industries.

Medical radiation applications include diagnostic examinations and therapeutic treatments using x-ray or other radiation sources.

6. The Committee decided to hold its forty-ninth session at the Vienna International Centre from 2 to 11 May 2000.

*Notes*

[1] The United Nations Scientific Committee on the Effects of Atomic Radiation was established by the General Assembly at its tenth session, in 1955. Its terms of reference are set out in resolution 913 (X) of 3 December 1955. The Committee was originally composed of the following Member States: Argentina, Australia, Belgium, Brazil, Canada, Czechoslovakia, Egypt, France, India, Japan, Mexico, Sweden, the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland and the United States of America. The membership was subsequently enlarged by the General Assembly in its resolution 3154 C (XXVIII) of 14 December 1973 to include the Federal Republic of Germany, Indonesia, Peru, Poland and the Sudan. By resolution 41/62 B of 3 December 1986, the General Assembly increased the membership of the Committee to a maximum of 21 members and invited China to become a member.

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